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A COMPARATIVE STUDY OF THE RESULTS OBTAINED IN INSTRUCTION IN THE "SINGLE TEACHER" RURAL SCHOOLS AND THE GRADED TOWN SCHOOLS (*Concluded*)

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GRAMMAR QUESTIONS

2. Write the names of the months of the year in one column and their abbreviations in another.
3. What is a pronoun?
4. Name the different persons in the personal pronouns.
5. Supply the proper form of WHO in the following: A babe was borne to Danae, a smiling boy . . . she names Perseus. For years she kept him hidden, and not even the women . . . brought food to the hiding place knew about him.
6. Write correctly: Go very quick. I seen him do it. Them books are mine. Why shouldn't us girls form a club?
7. Compare the adjective "difficult."
8. Compare the adjective "fine."
9. Tell how the following words in capitals are used. This TEST is EASY. I took my TEST this morning.
10. Write a letter to McClurg and Company, Chicago, Illinois, ordering a copy of Tennyson's poems.
11. Tell to what part of speech each of the words in capitals belongs. He ran FAST. He was a FAST runner. They FAST twice a week. The FAST lasted forty days.
12. Fill in the blanks with shall or will.
 - a) We . . . break through the ice if we are not careful.
 - b) We . . . try to do our duty.
 - c) He . . . misspell his words.
 - d) They . . . be captured if I can help it.
13. Give an illustration of an indirect object.
14. Select the correct word from among those in parentheses and write it over the dash.
 - a) I shall not wait — you more than five minutes (on, for).
 - b) It is a question between you and — (me, I).
15. What is a clause?

16. Name the tenses of the verb "learn" in the indicative mood.
17. Write a sentence containing a preposition. Underline the preposition.
18. What is meant by number in verbs?
19. What is meant by voice in verbs?
20. Pick out the transitive verbs in the following sentences.
It rains and the wind is never weary.
Ellen was elected president of her club.
John reads German easily.
Into the valley of death rode the six hundred.

The first of these questions was not evaluated as were the others, because in it the mistakes were counted. There were two common mistakes found in the papers, the spelling of February, and the omission of periods in the abbreviations. In the records no effort was made to keep these two separate, but all are recorded together.

Question 10 was another exception. Both it and Question 2 are omitted from the curve. In marking the results from Question 10 it seemed best to divide the letter into five parts, the "heading," the "recipient's address," the "salutation," the "close," and the "mistakes in punctuation." The following abbreviations were used: H, for heading; RA, for recipient's address; S, for salutation; C, for close; and E, for errors. The errors were mistakes in spelling and punctuation. If there were no mistakes in the letter, it would receive the following set of grades:

H	equals 2
RA	equals 2
S	equals 2
C	equals 2
E	equals 0

If there was a mistake in the arrangement on the page of any of the above elements, that element was marked 1; if it was omitted, it was marked 0. If there was an extra capital in the "close," the mark was 1. In the other questions the method used in the previous subjects was used. Each part of a question was graded separately and the results recorded in a separate column.

TABLE VIII. GRAMMAR
PERCENTAGES

Q	"ONE TEACHER" SCHOOLS		GRADED SCHOOLS	
	57 Boys	110 Girls	109 Boys	95 Girls
2.....	25	16
3.....	96	99	97	97
4.....	99	95	93	95
5a.....	85	79	82	84
5b.....	99	100	95	96
6a.....	86	93	80	92
6b.....	99	100	98	99
6c.....	100	100	94	99
6d.....	73	89	90	97
7.....	81	84	66	72
8.....	86	89	74	77
9a.....	76	91	87	92
9b.....	65	74	68	69
9c.....	61	85	79	85
10a.....	1.5	1.7	1.7	1.4
10b.....	1.4	1.7	1.4	1.6
10c.....	1.4	1.3	1.4	1.2
10d.....	1.2	1.2	2.4	1.2
10e.....	4.0	3.7	1.3	4.2
11a.....	69	78	64	69
11b.....	78	84	75	87
11c.....	75	83	79	87
11d.....	81	89	85	93
12a.....	49	61	55	59
12b.....	59	62	60	56
12c.....	83	93	86	83
12d.....	63	71	73	64
13.....	46	56	33	42
14a.....	95	94	92	95
14b.....	39	49	50	57
15.....	59	71	57	68
16.....	49	52	55	55
17.....	85	89	83	88
18.....	38	43	28	42
19.....	28	45	33	42
20a.....	31	28	17	29
20b.....	69	82	52	75
20c.....	78	78	57	71
20d.....	29	32	19	31

The "mechanical" and "reasoning" grouping was again used. Questions 2, 3, 4, 15, 18, and 19 are classed as "mechanical," and 5, 6, 7, 8, 9, 10, 11, 13, 14, 17, and 20 are "reasoning."

RESULTS

The full line is below the broken line for the greater part of the time; in fact it gets above the broken line only on

Questions IXa, etc., XIId, XIVa and b. In the use of "shall" and "will" in Question 12, the average for both systems of schools is 66 per cent. The average for the grades is 65 per cent, and for the "one teacher" schools 67 per cent. In the

GRAMMAR

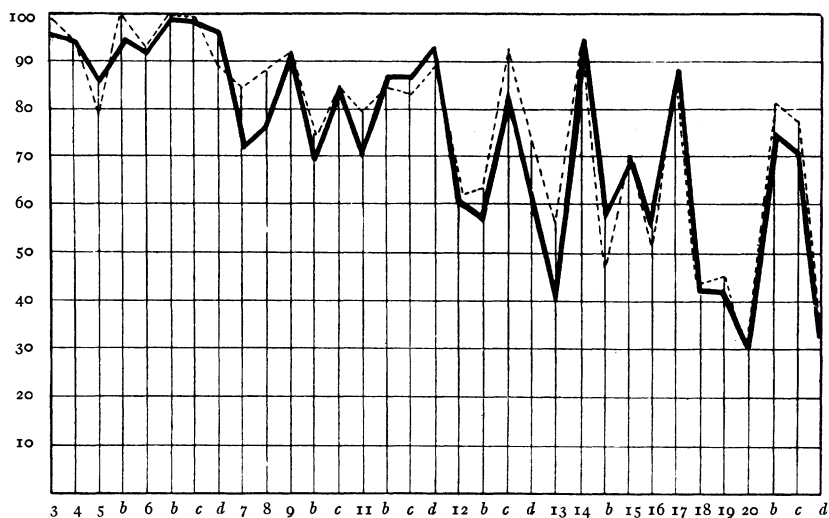


FIG. 7.—GIRLS

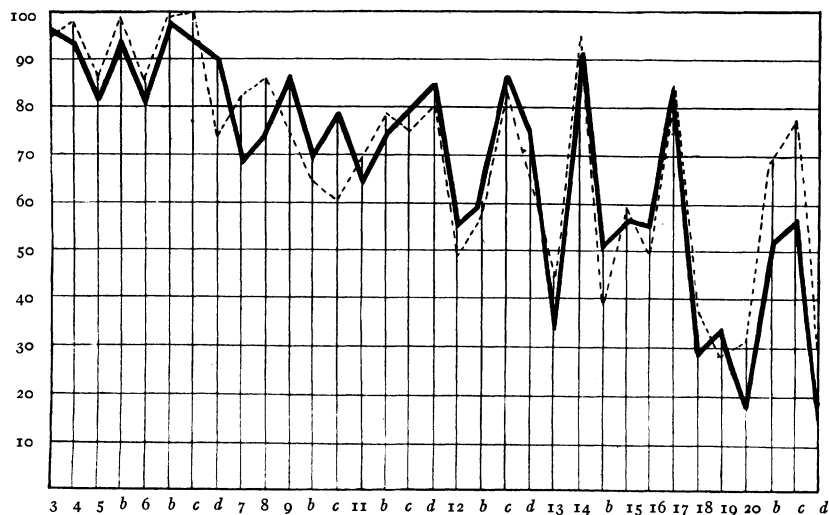


FIG. 8.—BOYS

selection of the transitive verbs in Question 20, 744, or 49 per cent of correct judgments were made. This would seem to indicate that they knew nothing about the use of the term, because by the laws of chance they should have been able to choose 50 per cent correctly if they knew only the meaning of the term "verb." In the returns from the graded schools it was evident that a large number were not even able to pick out the verb. In grading the papers it was often observed that "never" and "easily" were chosen as verbs.

In Question 2 the percentage of mistakes in the "one teacher" schools was one higher than found in the graded schools. Question 10, the letter, received the following grades:

Q	G	O. T.
H.....	83	89
RA.....	75	86
S.....	89	69
C.....	63	64
E.....	2.47	3.98

The most frequent mistake made in the "heading" was in its position on the page. It was often placed at the end of the letter. The "recipient's address" was sometimes omitted and sometimes given the position that belonged to the "heading." The "salutation" was sometimes omitted, sometimes placed on the same line with the first line of the "body" of the letter, and sometimes on the right side of the page. There were two mistakes that prevailed in the "close," the capitalization of both words, and the use of "respectively" for "respectfully." The "errors" were chiefly mistakes in punctuation. In this respect the grade pupils surpassed the other group, having on the average about 2.5 mistakes, while the other group had about 4 mistakes per letter. The grade children also excelled in the use of the "salutation."

HISTORY

Questions in chronology, biography, and geography were included in the list in United States history. This classification was in no way connected with the other attempt at dividing the

list into the two groups, "mechanical" and "reasoning." Again it is to be observed that this classification is only suggestive of the general character of the questions, because it was impossible to avoid overlapping in the questions.

HISTORY QUESTIONS

1. Name the nations that made explorations in America in the sixteenth century.

2. Why was the work of Paul Jones beneficial to America during the war for independence?

3. Who is governor of Iowa?

4. Why did the American colonists object to the "Stamp Act"?

5. What happened on the following dates: 1492, 1620, 1776, 1619, 1789, 1803?

6. Who was General Wolfe?

7. Why do we consider Lafayette a great man?

8. Who was president of the Constitutional Convention?

9. What effect did the invention of the cotton gin have upon slavery?

10. Who was the founder of Rhode Island?

11. What remarkable address was given at Gettysburg?

12. What object did Penn have in founding a colony in America?

13. What part of America did each of the countries mentioned in the answer to Question 1 settle?

14. Why was the Boston Tea Party organized?

15. Why was the "Fugitive Slave Law" passed?

16. For what were U. S. Grant, James Fenimore Cooper, William Henry Harrison, and Grover Cleveland noted?

17. Why was the "Monroe Doctrine" good for North and South America?

18. Show how important executive officers (such as ministers, judges, and members of the President's cabinet) are appointed.

19. Why was Grant's campaign against Vicksburg necessary in the Civil War?

20. Why were Forts Duquesne, Crown Point, Ticonderoga, Niagara, Acadia, and Louisburg, Quebec, objective points for the English during the French and Indian war?

In this subject the same method was used as was employed in the other subjects. All questions that were not correct were marked 0, and those that were correct were marked 1. Unless four countries were mentioned as having made explorations in America during the sixteenth century, the answer was considered incorrect. The answer to Question 9 was considered imperfect

if it did not mention the reasons why easier seeding of cotton increased the demand for slaves. "William Rogers" was not considered a correct answer to Question 10 and was marked 0. The President alone has not the power to appoint executive officers, and unless the answer mentioned specifically the function of the Senate in that work, the question was marked 0.

TABLE IX. HISTORY
PERCENTAGES

Q	"ONE TEACHER" SCHOOLS		GRADED SCHOOLS	
	57 Boys	106 Girls	106 Boys	100 Girls
1.....	65	62	45	51
2.....	76	66	67	59
3.....	75	73	58	60
4.....	41	42	53	56
5a.....	97	98	94	99
5b.....	83	88	61	64
5c.....	79	83	59	63
5d.....	41	54	29	36
5e.....	48	56	35	39
5f.....	57	63	47	60
6.....	37	26	40	29
7.....	58	52	64	57
8.....	50	52	43	42
9.....	41	41	51	52
10.....	59	57	68	64
11.....	74	66	63	68
12.....	59	66	75	82
13.....	64	53	46	49
14.....	64	73	88	82
15.....	51	53	60	60
16a.....	88	85	73	65
16b.....	39	46	34	26
16c.....	74	85	63	67
16d.....	81	79	51	59
17.....	47	43	42	53
18.....	9	9	9	6
19.....	39	33	27	17
20.....	9	10	9	6

The curves in Fig. 9 show the boys from the grades reaching the highest and lowest points. The boys from the "one teacher" schools have a more uniform, and at the same time higher, average curve. The same condition is found to exist in Fig. 10. Other figures show a marked similarity in all points, and indicate a superiority on the part of the children from the "one teacher" schools.

In general the two curves take the same direction, but there are three exceptions. In stating the effect the invention of the

cotton gin had on slavery (Question 9) the full curve goes up to 54 per cent and the broken curve down to 41 per cent; on Question 11 (the Gettysburg Address) the full line fell to 64 per cent and the broken line rose to 71 per cent; in stating the reasons for Penn's settlement of Pennsylvania in Question 12

HISTORY

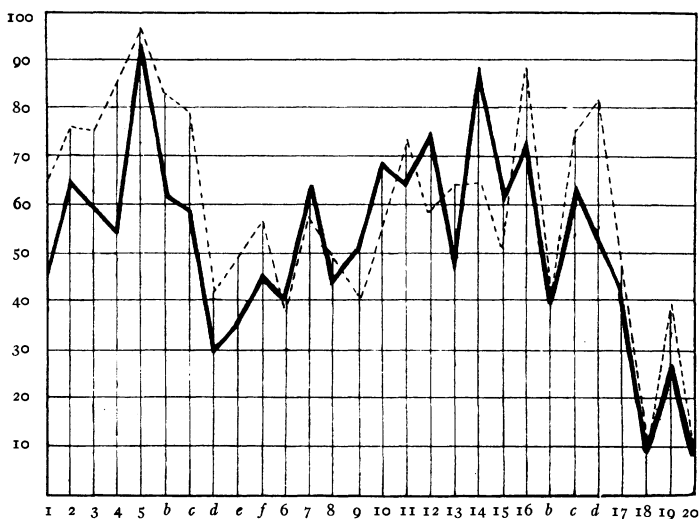


FIG. 9.—BOYS

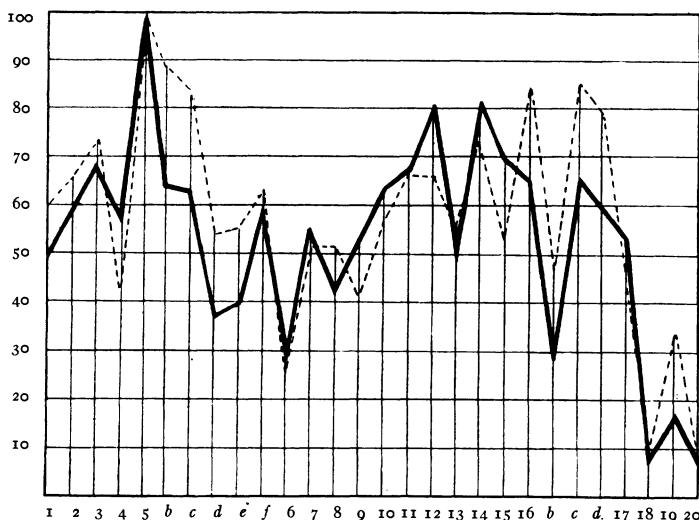


FIG. 10.—GIRLS

the full curve rises to 77 per cent while the broken curve falls to 63 per cent. The curves reach their highest point on the first part of Question 3 and their lowest point on Question 20.

The "range" for both systems of schools is the same, 84 per cent.

SPELLING

The spelling examination questions were arranged in three parts, the first being taken from Dr. Cornman's study, p. 95, the second from the same source, p. 92, and the third, a composition on "Coasting." In this examination it was necessary for teacher to pronounce the words and dictate the sentences.

Part one was made up of words that are not often used by children but are all found in spelling-books. In marking the papers no distinction was made between a word that had only one mistake and a word that had more than one. The words were numbered in order, from one to fifty. But two marks were used, I and O. The questions follow:

1. Pronounce the following words to be written by the pupils: anxious, accomplish, acquire, alcohol, ancient, appearance, assistance, auctioneer, brilliant, cashier, character, circular, cologne, conceit, counterfeit, cylinder, diameter, disappoint, divisible, excellent, experience, fashionable, flourish, glazier, guest, idolize, important, innocent, irritate, legible, lieutenant, magnetize, messenger, mischievous, mucilage, obstinacy, orchestra, particular, penitentiary, petroleum, pleasure, poultice, profession, receipt, refrigerator, repetition, sacrifice, secretary, sincere, spectacle.

2. Dictate the following to be written by the pupil: While running he slipped. The weather is changeable. His loud whistling frightened me. He is always changing his mind. His chain was loose. She was baking a cake. I have a piece of it. Did you lose your almanac? I gave it to my neighbor. Was it necessary to keep me waiting so long? Do not disappoint me so often. Do not deceive me. The children are hopping. This is certainly true. If we have patience we shall certainly succeed. He met with a severe accident. Sometimes children are not sensible. You had no business to answer him. The ride was very fatiguing. I appreciate your kindness, I assure you. Intelligent persons learn by experience. He is thoroughly conscientious; therefore I trust him.

3. Write a composition of fifty words on the subject, "Coasting."

To the teacher: Do not allow them to use any books for reference, and do not allow them to get any help in spelling the words they use. The object of this question is to find out how they spell the words they use in everyday life.

TABLE X. SPELLING
PERCENTAGES

No.	QUESTION 1				QUESTION 2	
	"ONE TEACHER" SCHOOLS		GRADED SCHOOLS		"ONE TEACHER" SCHOOLS	GRADED SCHOOLS
	51 Boys	74 Girls	96 Boys	87 Boys	166 Boys and Girls	206 Boys and Girls
1.....	87	86	81	79	99	99
2.....	89	92	83	88	79	70
3.....	81	83	74	84	99	97
4.....	85	59	68	67	79	71
5.....	85	77	74	91	98	99
6.....	69	71	58	81	85	87
7.....	81	75	75	88	95	92
8.....	63	68	67	72	84	88
9.....	71	83	81	84	98	99
10.....	81	75	83	74	96	94
11.....	83	84	66	87	89	88
12.....	88	88	93	97	94	95
13.....	39	49	44	41	99	96
14.....	69	73	65	77	93	89
15.....	69	65	57	71	58	55
16.....	68	65	60	72	89	80
17.....	68	68	80	90	95	91
18.....	50	68	37	40	77	73
19.....	75	75	63	72	98	98
20.....	75	71	58	63	98	96
21.....	79	73	63	87	51	42
22.....	91	94	83	90	78	78
23.....	69	64	58	50	98	91
24.....	84	77	71	55	91	89
25.....	95	90	86	96	91	89
26.....	69	67	52	63	87	77
27.....	95	90	88	98	87	78
28.....	81	69	64	82	96	90
29.....	61	66	57	79	88	83
30.....	41	48	43	54	93	91
31.....	55	51	39	52	99	100
32.....	32	33	28	20	77	67
33.....	87	75	80	81	76	70
34.....	63	51	61	64	95	98
35.....	41	48	39	34	97	100
36.....	42	42	45	41	54	52
37.....	63	57	58	63	69	65
38.....	83	79	78	94	98	94
39.....	34	36	32	19	92	93
40.....	69	63	49	66	78	67
41.....	95	68	84	95	95	98
42.....	42	58	34	43	97	99
43.....	79	81	71	87	79	78
44.....	58	56	49	58	57	56
45.....	50	51	53	49	37	32
46.....	51	63	45	55	85	83
47.....	87	73	69	80	94	99
48.....	64	72	65	86	95	100
49.....	87	66	74	82
50.....	71	58	64	75

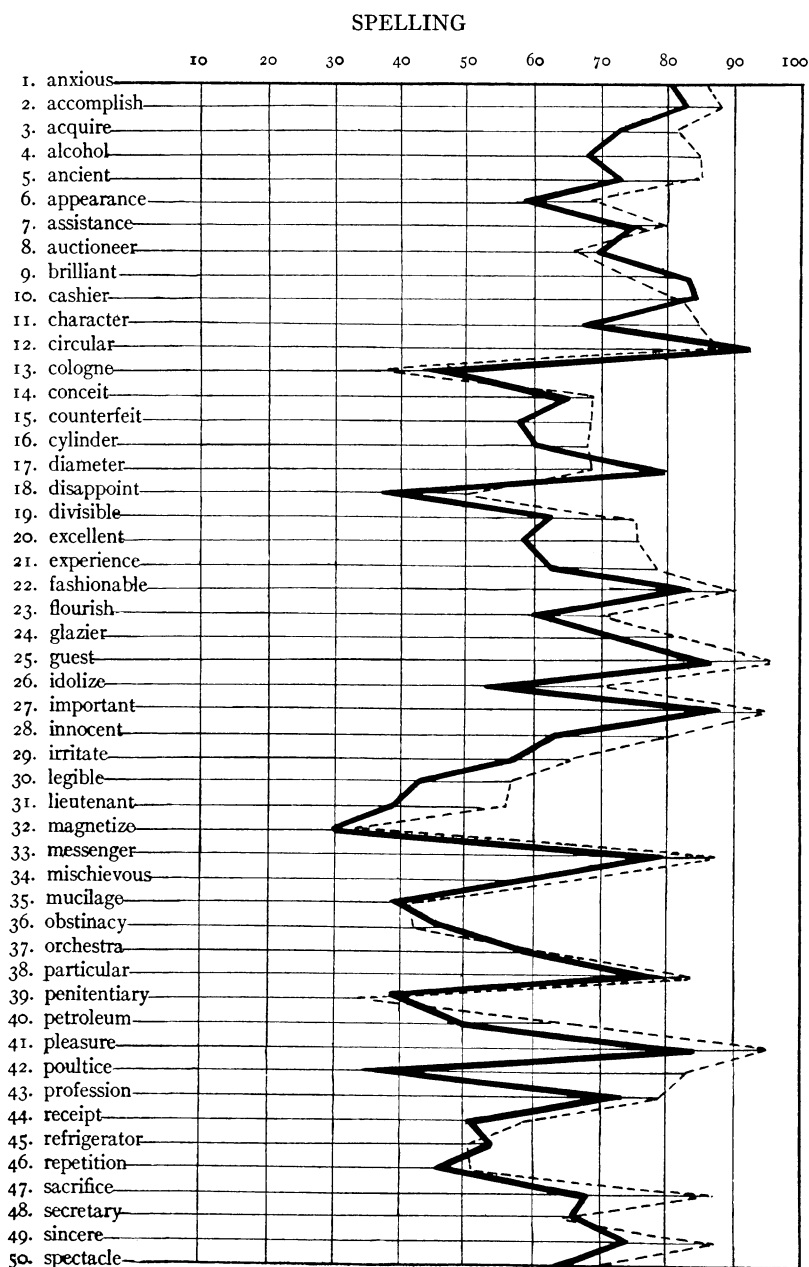


FIG. 11.—PART I—BOYS

SPELLING

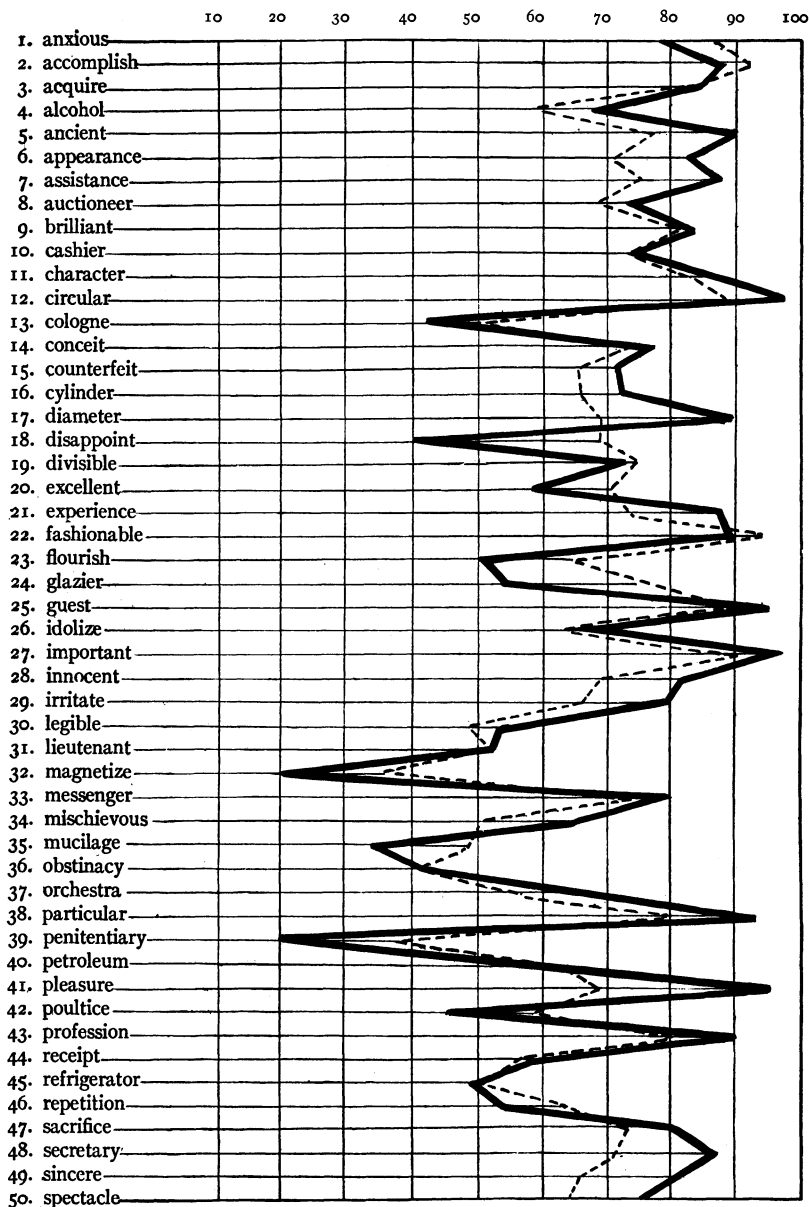


FIG. 12.—PART I—GIRLS

The same method of marking was employed in both the first and second parts. In the second part—the dictation exercise—the words that were most likely to be missed were numbered and a record kept of the number of times each word was missed. The results of the first part are recorded in the curves in Fig. 11. In this curve the graded schools surpass the “one teacher” in only three places, the twelfth, the seventeenth, and the thirty-sixth words—“circular,” “diameter,” and “obstinacy.” “Circular” was the easiest for the graded, and “accomplish” for the “one teacher” schools, while for both “magnetize” was the most difficult. The most frequent error in spelling “magnetize” was in substituting “i” for “e.”

In the second list “slipped” was the easiest word numbered and “conscientious” the most difficult. Here again the curves for both systems have the same general direction, but the graded system goes above the “one teacher” system twelve times, on the words “whistling,” “changing,” “mind,” “baking,” “sometimes,” “answer,” “ride,” “assure,” “persons,” “learn,” “trust,” and “him.” In none of the above cases was the percentage of words spelled below 85. It would therefore seem that the grade children excel in spelling the simplest words. The most difficult for both systems were the words “lost,” “disappoint,” “fatiguing,” and “conscientious.” The curve on these words favors the “one teacher” schools. In addition to the numbered words the following words were misspelled in the grade system: “no,” “to,” “often,” and “very,” twice each; “gave,” once; and “always,” three times. In the “one teacher” system “no” was misspelled four times; “often,” twice; and “very,” once. “No” and “to” were misspelled by the substitution of “know” and “two.” “Disappoint” occurs in both lists and was spelled correctly an average of 52 per cent of times, and in the second, 50 per cent of times. In the composition there did not seem to be much difference in style or in the character of the words used by the pupils of the two systems. No record was kept of the words misspelled in this question, but only of the number. There was a total of 133 missed by the grade children, or an average of .65 of a word for each paper submitted, and 37 missed by the “one teacher” school pupils, or an average of .25 of a word for each.

SPELLING

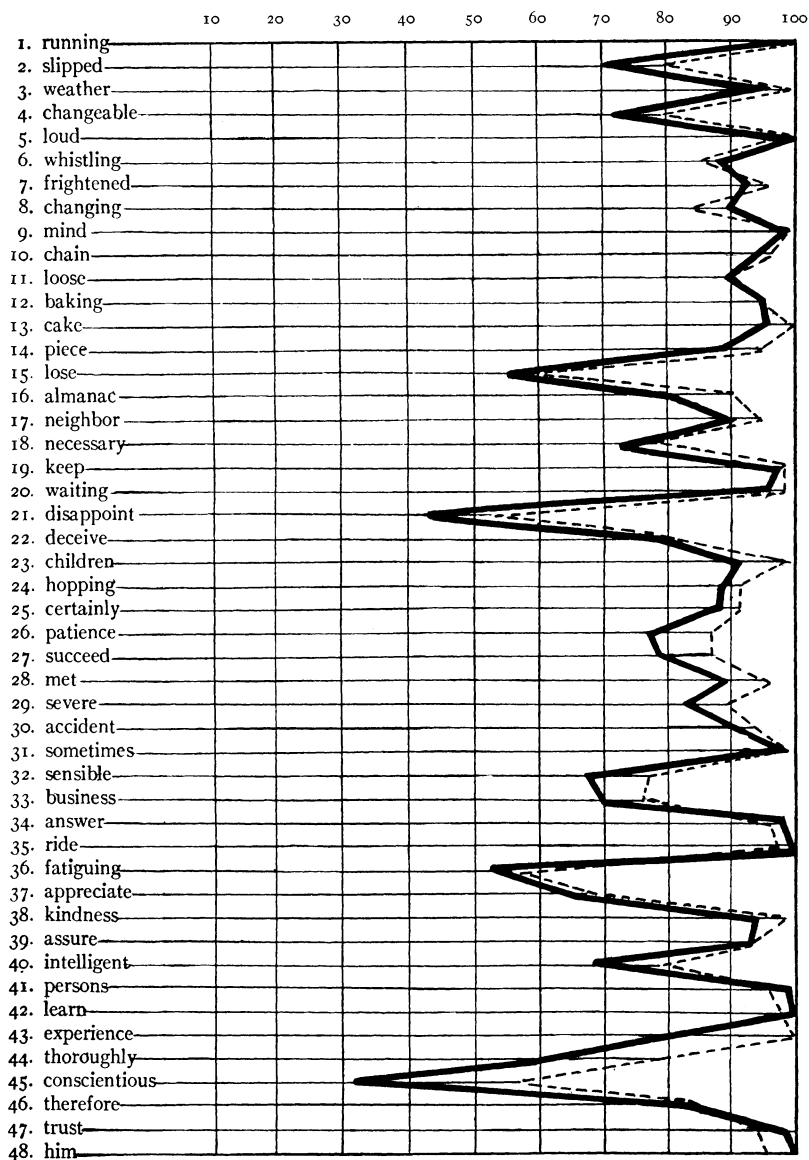


FIG. 13.—PART II—BOYS AND GIRLS, NOT SEPARATED

CONCLUSIONS

The papers were generally well written. There was little variation in the number submitted in the different subjects, and the questionnaires were well answered, all of which goes to show the interest of both pupils and teachers in the examinations. The results indicate that the pupils from the "one teacher" rural schools knew more about the work covered than did those from the grade schools. The difference is not great but nevertheless there is a positive difference. In the beginning of this study it was assumed that the conditions were equal, and that any difference that might be found in the results could be attributed to the organization of the schools into grades. Later developments have shown some factors at work that could not be predetermined.

From the grade schools 114 boys and 97 girls handed in papers; from the "one teacher" schools there were papers from 57 boys and 112 girls. Expressed in percentage terms there were 54 per cent boys and 46 per cent girls in the graded, and 34 per cent boys and 66 per cent girls in the "one teacher" schools. It might be argued that since girls are better developed at that period of life, this preponderance of girls in the country schools would make the difference found in the returns. This was not found to be a sufficient explanation of the difference in the results, because when the boys were compared with the boys, and the girls with the girls, the same relation was present.